

L 3.4 Systems of equations in three variables

Find the solution.	$3x + 6y - 2z = -6 \rightarrow \text{equation 1}$ $2x + y + 4z = 19 \rightarrow \text{equation 2}$ $-5x - 2y + 8z = 62 \rightarrow \text{equation 3}$
Step: 1 Multiply the equation 2 by -6 Combine equations 1 and 2	$3x + 6y - 2z = -6$ $-12x - - =$
Eliminate y terms	$-9x - 26z = \rightarrow \text{equation 4}$
Step : 2 Multiply equation 2 by 2 Combine equations 2 and 3	$4x + y + z = 38$ $-5x - 2y + 8z = 62$
Eliminate y terms	$-1x + = 100 \rightarrow \text{equation 5}$
Step: 3 Multiply equation 5 by -9 Combine equations 4 and 5	$9x - = -$ $-9x - 26z = -120$
Eliminate x terms	$= -1020$
	$Z =$
Step:4 Substitute $z =$ in equation 5	$-1x + 16() = 100$ $-1x + = 100$ $-1x =$ $x =$
Step: 5 Substitute $x =$ and $z =$ in equation 1	$3x + 6y - 2z = -6$ $3() + 6y - 2() = -6$ $+ 6y - = -6$ $6y = -6$ $6y =$ $y =$
Solution	$(x, y, z) = (, ,)$